

RAIC SYLLABUS

THESIS PROJECT OUTLINE

***“A DESIGN
FOR
ARCHITECTURAL EDUCATION”***

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SK85ON23**

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*All architecture is shelter; all great architecture
is the design of space that contains, cuddles,
exalts, or stimulates the persons in that space.*

Philip Johnson

Thesis Proposal:

The profession and practice of Architecture is not properly understood by the majority of the public. ("Architects make blueprints.") The general public is ignorant of the skills, role and contribution of the Architect relative to cities, culture and the built environment. If there is no understanding of what comprises the profession, there will be no requirement or respect for the skills of an Architect.

"We shape our buildings; thereafter they shape us."

Sir Winston Churchill

This thesis intends to address the public perception of Architecture through an educational setting. The thesis process begins with development of an educational curriculum for the purpose of instruction in architectural design principles. This curriculum will be developed in consultation with practicing educators. The curriculum will be developed during the research stage until it is deemed completed by the participating educators.

The thesis process continues through creation of an architectural program based on the curriculum, including functional and spacial parameters. The architectural program will be created with the intent to facilitate the instructional aspect of the curriculum. The architectural design concepts, leading to a final design solution, will be derived using the program requirements.

The final architectural design will demonstrate the method by which the delivery of the educational curriculum and architectural program have been incorporated into a built form.

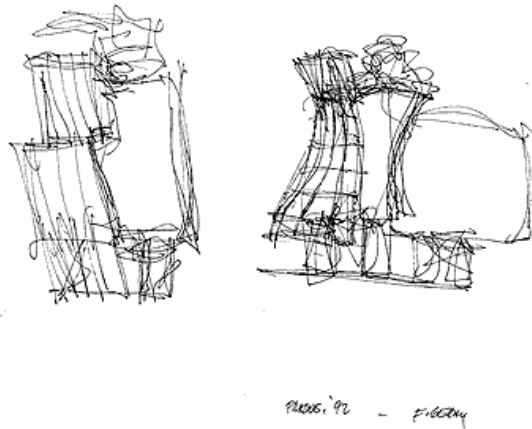
This thesis will provide a design solution for a building to facilitate instruction of an educational curriculum related to architectural design principles.

INTRODUCTION

Three key elements are relative to the intended research:

1. Architecture:

The general public should be given the opportunity to understand that Architecture touches our lives in every way by the manner in which we exist and present ourselves through our buildings. Architecture influences all facets of daily lifestyle.

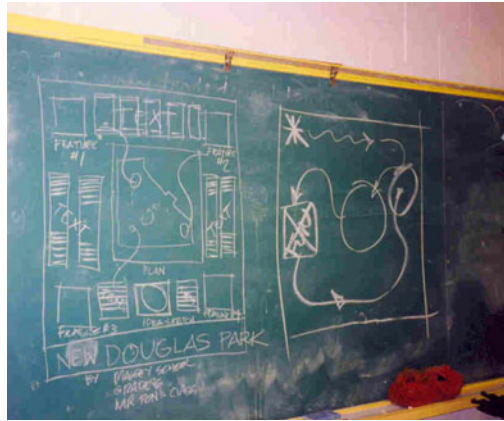


Nationale-Nederlanden Building, Prague, Czech Republic
Frank O. Gehry

To teach and provide experiential learning, the environment must reflect the subject matter. It is intended that the design solution incorporate the developed curriculum through architectural design concepts and theory exploration. The building should reflect the knowledge it seeks to instill.

2. Education:

The architectural profession assumes the role of educator on every project. The role of the Architect is to analyze the problem, explain the process, propose and carry out implementation of the design solution and educate the client relative to the proposed solutions. This process of education is present from a simple roof design through to the most complex urban planning solution.



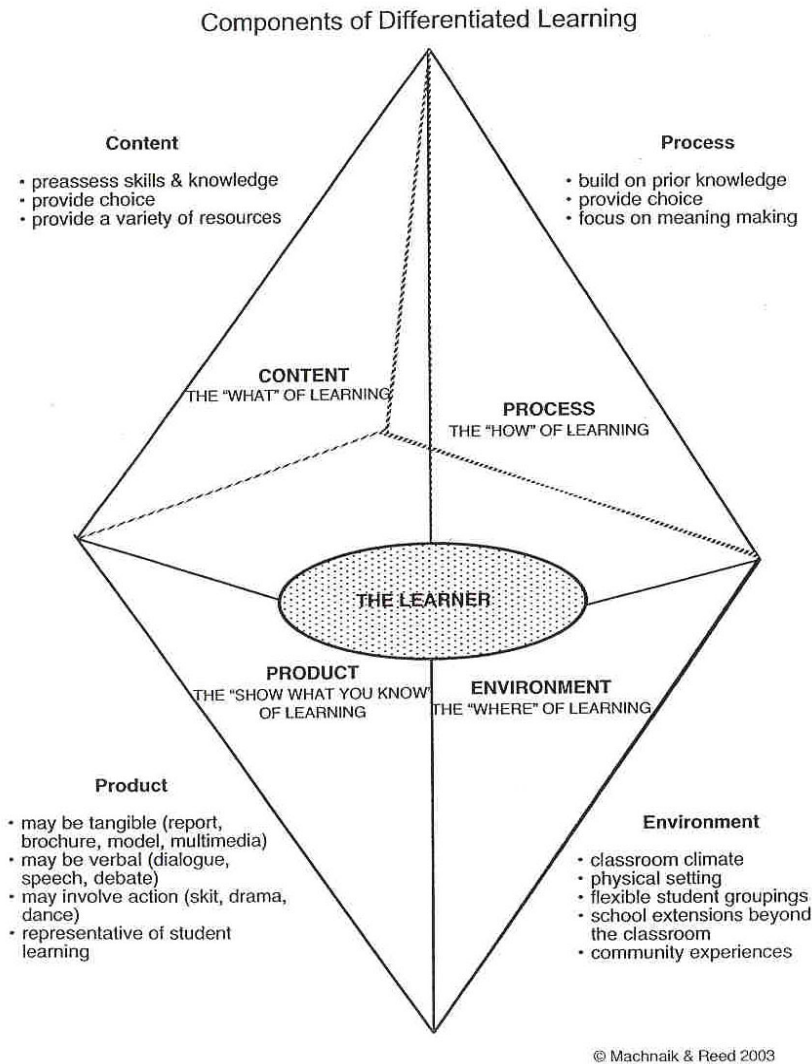
Classroom Instruction, Architecture Goes To School
RAIC Conference, 1998

This thesis will create opportunity for awareness and understanding of the built environment. The aim of the education curriculum is to encourage a positive development of attitude and approach towards architecture and the built environment. This aim is achieved through increasing awareness and understanding of architecture in our youth. Achievement of this aim will provide participants with an understanding of “reading architecture” in their everyday lives.

The parameter applied to the educational delivery process for the purpose of this study involves elementary grades seven and eight students coming to the proposed facility for one afternoon each week during a single reporting period of the standard school year. A single reporting period allows for 16 instructional sessions. The research development will complete a breakdown of 16 units related to the curriculum structure.

The delivery process for the curriculum is based on Components of Differentiated Learning (*Differentiating Instruction in the Regular Classroom*, Diane Heacox, Ed.D.):

- **CONTENT:** What is to be taught.
- **PROCESS:** How is it to be delivered.
- **PRODUCT:** Show what you have learned.
- **ENVIRONMENT:** Where would the learning take place.



3. Children:

Children have the capability and freedom to absorb new ideas and concepts, which allow for a broader range of perception than their elder counterparts. Stereotypes relative to buildings and the built environment have not yet been set at elementary grade levels.



Student Display, Architecture Goes To School
RAIC Conference, 1998

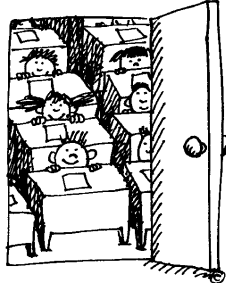
Grades Seven and Eight are the proposed target group. Students in this age group, ages 12 – 14 years, are in the process of identifying their personal space and role within the community. They are developing a greater awareness of themselves relative to the world around them. This age period is a stage of personal and social growth. It is a time for individual exploration in the environment. These grade levels demonstrate capabilities which allow them to perceive three dimensional constructs and grasp conceptual ideas. These grade levels have the language skills necessary to discuss concepts and ideas relative to architecture and design.

If teaching has any purpose, it is to implant true insights and responsibility. Education must lead us from irresponsible opinion to true, responsible judgment. It must lead us from chance and arbitrariness to rational clarity and intellectual order. Therefore let us guide our students over the road of discipline from materials through function to creative work.

Mies van der Rohe, address to the Armour Institute

Part One: Research and Programming

The first part of the thesis project will research architecture and design principles relative to proposed educational components.



The research stage will be presented in graphic and written format. The process during this stage will follow a circuitous path of:

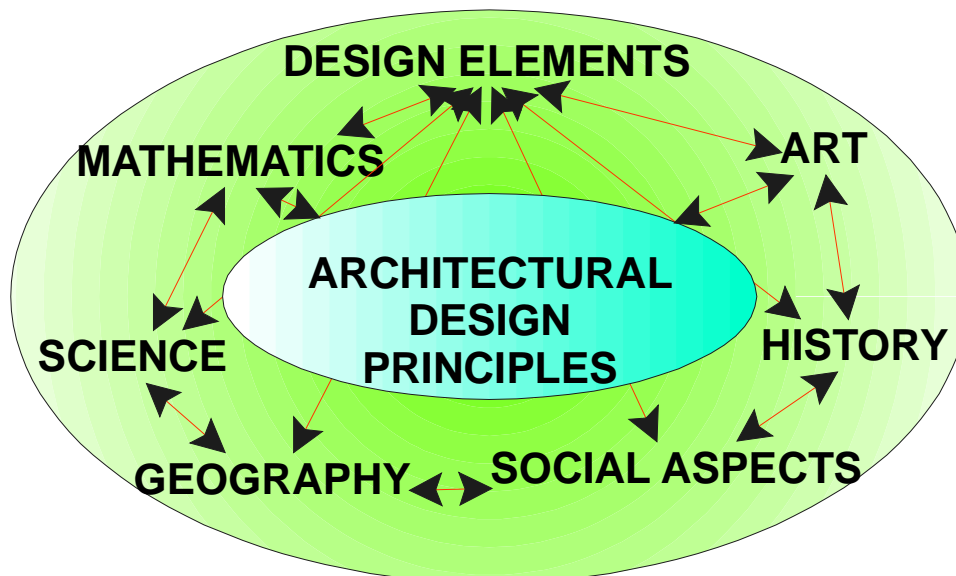
- Research of the specific item: existing literature, history, developments;
- Analysis relative to architectural design;
- Development of curriculum and instructional guidelines. This development will be coordinated with the Education Advisor to create a Unit of Work. By definition, a Unit of Work defines the objectives of the curriculum;
- Development of spatial and functional program for each item;
- Review of the specific item with the advisor team to ensure relative aspects have been addressed;
- Additional research as required.

Let us think of education as the means of developing our greatest abilities, because in each of us there is a private hope and dream which, fulfilled, can be translated into benefit for everyone and greater strength for our nation.

John F. Kennedy

A brief summary of the proposed educational components to be reviewed relative to architectural principles includes:

- Design Elements
- Mathematics
- Science
- Geography/Geology
- Social Aspects
- History
- Art



These components are intertwined, leading through a path of discovery as the design principles are derived and confirmed in the educational curriculum.

The outline of the proposed principles of the built environment may include:

Educational Components

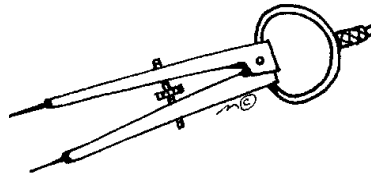
The outline of the proposed principles of the built environment may include:

Design Elements

- Colour: relationship of colour to emotion, illustration of colour used for affect and contrast. Colour principles relative to presentation and building products;



- Light/Shadow: natural lighting and the perception of surfaces and voids. The integration of natural and artificial light, the use of shadows;
- Mass/Volume: Definition of massing relative to context, interior special arrangements, exterior appearance;
- Texture: Surface definition, texture and use for purpose and effect;
- Perceptions (Visual/Physical): Review stereotypes of building designs and the contraventions of these designs. The use of perception, both visual and physical, to benefit a design solution.



Mathematics

- Building and Area calculations: The use of math in everyday practice covering areas such as programmatic planning, area calculations, building estimating, and project development;
- Proportional geometry: explanation of the process used to derive proportional relationships in building design. Analysis of Vitruvius relating to the design/planning for public buildings as a mathematical construct. Review of the Golden Section (Golden Mean) and applications in architectural design.

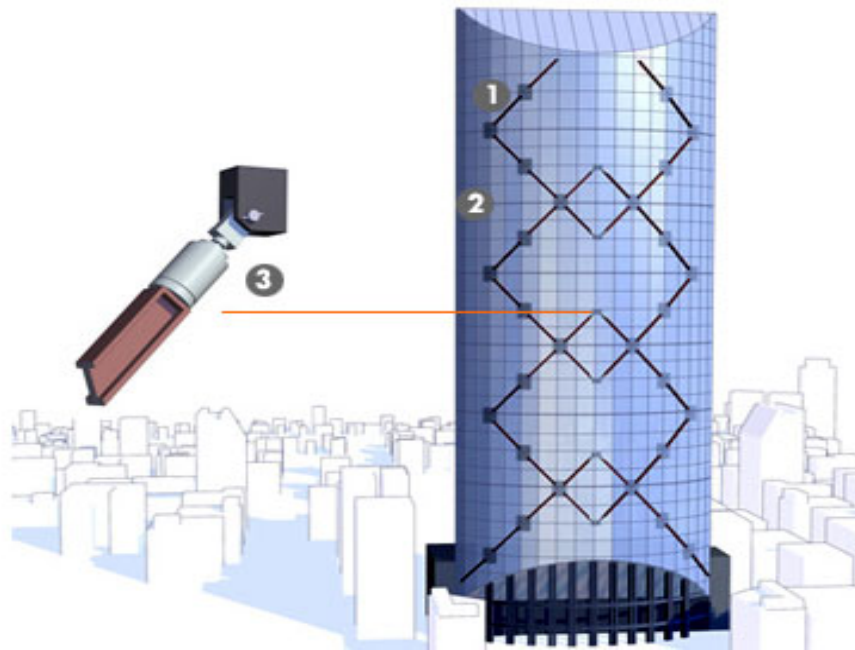


The Modulor System

Le Corbusier

Science

- Science of building materials: Review building materials and their intended use. Reasons for material selection, governing factors, alternatives for each material, review of basic materials used in the building process;
- Structural effects: review of basic engineering concepts relative to building design and construction. Tension versus compression, loading, static and live load forces, human factors;



Structural Analysis, ArcSpace.Com

- Climatic effects: review the effects of climate, location, solar influence (uses and drawbacks), wind, rain, rain screen principles, snow (live and dead load) and changes through the seasons.

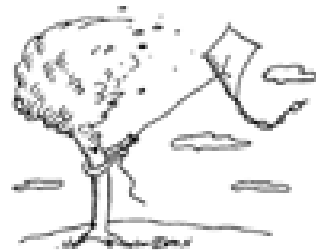
Local Geography / Geology

- Land forms/topography: A review of local site types (woodland, river, lake, prairie) and the effect upon potential design solutions. Opportunities for design types that exist within the given site constraints. Analysis of architects' solutions to site influences (Ex.: Wright – Falling Water, Cardinal – SIFC, Museum). Explanation of determining proper influences for design resolution;



Great Smoky Mountains National Park Site Image

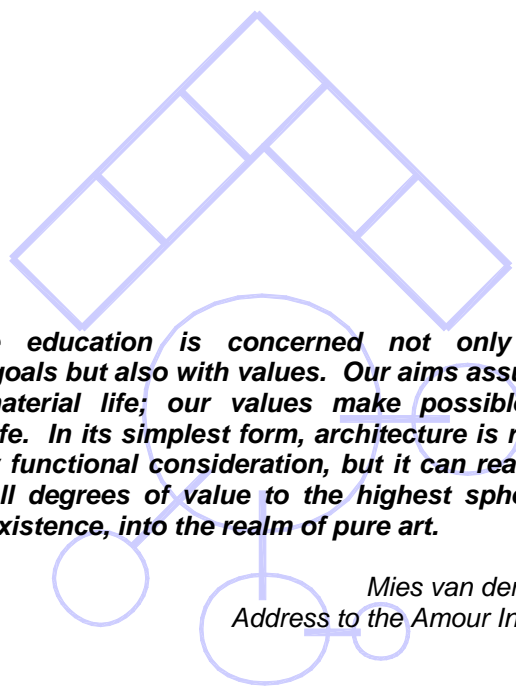
- Soil types: influence on design solution of various soil conditions (structural in nature). Influence on design solution relative to the contextual nature of the proposed site (mountainous, bedrock, topsoil);
- Orientation (views/vistas): The use of orientation as a principle for design resolution. Views to take advantage of natural vistas, building orientation and integration of exterior elements with a design solution;



- Wind and water elements: wind elements related to orientation and topography. The use of wind to facilitate building systems. Design of building forms to respect wind patterns and climatic effects of the science area.

Social

- The Concept of Space: Review of personal versus private spaces. A review of spatial separation, comfort zones, and applications for each type. Discussion and analysis of spacial separation. Item will review personal security and comfort;
- Context of Society: The concept of societal values specific to the North American model of public and private relationships as they relate to architectural design of public spaces;
- Role of the architect: A review of the influence of architects relative to building design and city planning. Discussion relative to communicative and coordinative role of the architect to service the clients' requirements. Discussion related to design compromises, aspects of sacrifice, and key reasons for including specific design elements to suit program requirements.

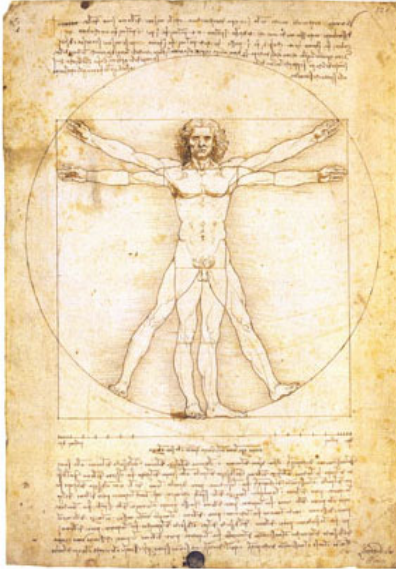


True education is concerned not only with practical goals but also with values. Our aims assure us of our material life; our values make possible our spiritual life. In its simplest form, architecture is rooted in entirely functional consideration, but it can reach up through all degrees of value to the highest sphere of spiritual existence, into the realm of pure art.

*Mies van der Rohe
Address to the Amour Institute*

History

- History of architecture: An overview of the history of architecture covering the major periods of development. Discussion relative to the influence of context on period architecture;



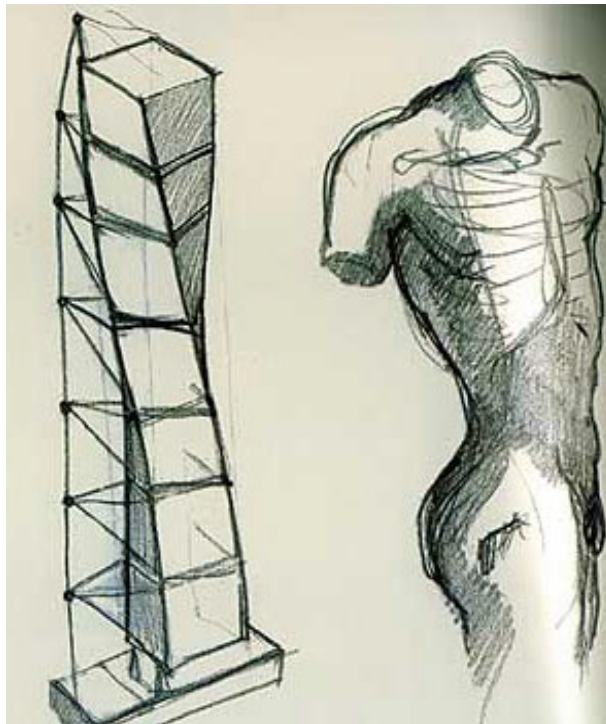
Proportions of Man: Leonardo DaVinci

- Development of architecture: Analysis of the development of early architecture based on the evolvement from master builder to design consultant and architect. Review of periods related to the great architectural triumphs: Vitruvius, Palladio, Brunelleschi, the Renaissance architectural movement, modern architecture and current trends;
- Historic Precedents: Review of historic precedents in architecture and subsequent influences in terms of period and style. Use of precedents in current architectural design.

Art

This section relates strongly to the Design Elements Section. The artistic component of this thesis focuses on the use of art as a communicative tool relative to the completed or intended design solution.

- Development of a design: Use of a sketch book, reflections of historic influences, collection of ideas;
- Graphic presentation & analysis: Use of graphics as an illustrative tool to communicate the design solution. Bubbles, diagrammatic views, graphic symbols, means and methods by which to illustrate the idea. Relates to section of “Colour, form, mass and shape”;



The Turning Torso, Santiago Calatrava

- Artistic composition: Creating a display to convey a design solution. Reasons for display types, knowing your audience and focusing on the clarity of the graphic presentation. Artistic composition relating to specific graphics, board layout, organization and set-up.

In organizing a system for architectural education we must recognize this situation if we are to succeed...We must fit the system to this reality. Any teaching of architecture must explain these relations and interrelations. We must make clear, step by step, what things are possible, necessary and significant.

Mies van der Rohe, address to Amour Institute

The culmination of this stage will be the curriculum, written and graphic, and the programmatic analysis and function relationship diagram for the intended design solution. The subsequent functional program for the curriculum is produced from the research analysis.



Final Display, Architecture Goes To School
RAIC Conference 1998

Part Two: Building Design Solution

Buildings, too, are children of Earth and Sun

Frank Lloyd Wright

Part Two of the Thesis Project involves design review and options, functional programming, conceptual design, design development and illustration of the intended final solution. This stage creates a design solution that embodies and reflects the principles developed through the Research Stage.

This stage will carry on from Stage One through:

- Functional programming and relationships;
- Spatial analysis based on curriculum needs defined in Stage One;
- Conceptual design and design development;
- Graphic analysis of research concepts, integration into design solutions;
- Final design solution;
- Graphic / verbal presentations;
- Final Presentation documentation and arrangement.

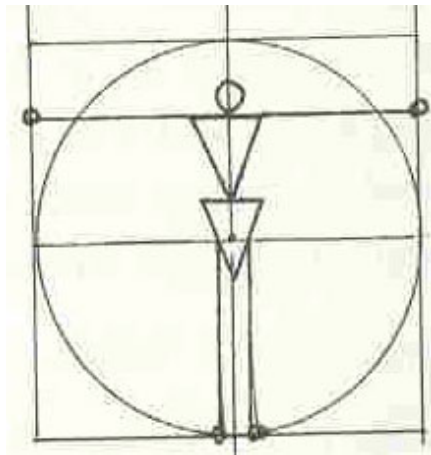
This stage will be completed in a conventional methodology of architectural design. It will include mentor/advisor meetings and interim presentations appropriate to the design development.

Site selection will be completed according to the principles established during the Research Stage (Geology/Geography). The site will be chosen with respect to the educational context of the problem.

Proposed Time Frames:

The following time frames will be confirmed as the process develops.

- .1 Thesis Outline Submission** May 2004
- .2 Stage One – Research, Curriculum Development, Programming:**
Overall time allotment: June 2004 – March 2005
 Advisor Reviews Bi-weekly excluding holidays
 Interim Presentations Quarterly through the time period.
Research Completion and Presentation: March 2005
- Programme Development: March – June 2005
Programming Completion and Presentation: June 2005



- .3 Stage Two – Building Design:**
Design stages: July to December 2005
 Advisor Reviews Bi-weekly excluding holidays
 Interim Presentation October 2005
- .4 Final Thesis Presentation:** December 2005

Literature Search:

An overview of available reference materials:

- *A Pattern Language*, Christopher Alexander
- *Architectural Theory since 1968*, K. Michael Hays
- *Architecture: Pre-History to Post-Modernism*, Trachtenberg/Hyman
- *Architecture is Elementary*, Nathan B. Winters
- *Building Digests*, National Research Council of Canada
- *Building Economics for Architects*, Theorbojoern Mann
- *Defensible Space*, Oscar Newman
- *Design Through Discovery*, Marjorie Elliott Bevin
- *Designing For Human Behavior*, Jon Lang
- *Experiencing Architecture*, Steen Eiler Rasmussen
- *Personal Space*, Robert Sommer
- *Precedents in Architecture*, Clark/Pause
- *Principles of Form and Design*, Wucius Wong
- *The City Shaped*, Spiro Kostof
- *The Discipline of Design*, Roe/Soulis/Handa
- *Towards a New Architecture*, LeCorbusier
- *Vitruvius – Ten Books on Architecture*, Ed: Rowland/Howe

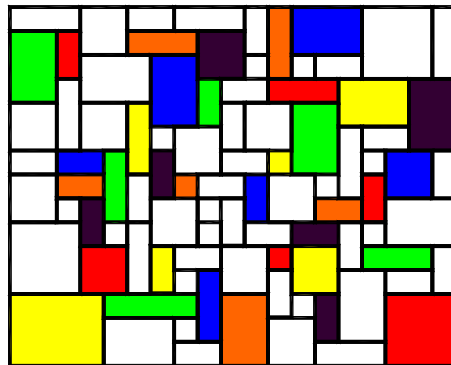


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